TAP INTO DNR

Missouri Department of Natural Resources
Technical Assistance Program

Vol. 1 No. 2 Summer 1995

Choosing to Prevent Pollution

Choices. Every day we are faced with choices, many of which we make without even a thought. Shall I turn on the hot water or the cold to wash my hands? Easy decision, huh? Do what's most convenient, reach for the closest faucet. But our choices have consequences. Reaching for the closest faucet seems more efficient because I use less time and energy. However, if the closest faucet is the hot water, I am going to use heated water unnecessarily. That costs the energy used to heat the water and depletes the supply of hot water should it be needed. And once my hands are washed, how shall I dry them -- with paper towels or the hot air dryer?

Most of us choose practices that save energy when we can -- after all, electricity and gas cost money. And most of us choose to take steps to conserve water -- water costs money, too. But do we make choices based on how much pollution is created? Do we choose to prevent pollution? After all, pollution costs money, too.

The idea of pollution prevention is to reduce the amount of pollution or waste at the source, that is, the point it is generated. In other words, don't make the waste. Nearly everything that leaves a business as a waste or pollutant is something that business has paid for up front. Who paid for the styrofoam going in the trash? Who paid for the solvents going in the air? Who paid for the metals going in the water? Generally, the business generating a waste pays for the materials on the front end and pays again for treatment or disposal. From a business perspective, it makes good sense to choose to prevent pollution. Here are some examples of how it's done:

- A manufacturer of electronics materials switched from chlorinated solvents to other cleaning and polishing materials. The company reduced hazardous air pollutants from over ***350,000*** pounds to 2,oOO pounds and hazardous waste from over 260,000 pounds to just over 8,000 pounds annually in that process. The plant will save nearly $2 million annually in avoided raw material cost and disposal costs.
- A manufacturer replaced the foam drinking cups used by staff with ceramic cups bearing the company's logo. This saved over $7,400 per year in replacement and disposal costs.
- A manufacturer of shoe components reduced hazardous waste generation by 90 percent by switching from solvent-based adhesives to water-based adhesives.

Many businesses have "found that pollution prevention has saved them money. At the same time, they are protecting the environment, reducing liability, improving worker safety and improving their public image. Preventing pollution can also reduce the environmental regulations a business must follow.

There are many ways to prevent pollution, but the first step is to find out what pollution is generated and where. Some of the areas to consider are:

- improved housekeeping and maintenance,
- purchasing procedures and inventory control,
- changes in raw materials,
- process changes,
- changes in the product.

Consider the business of peeling potatoes to make french fries. Major waste streams are potato

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peels and rotten potatoes. Each represents significant costs because potatoes are purchased by the pound, and waste disposal fees are based on volume. Using the list above, some ideas for preventing pollution are:

- reduce peel volume through improved maintenance of keeping the knives sharp,
- purchase good quality potatoes and use the oldest potatoes first to reduce loss from spoilage,
- change the raw material to a larger potato or differently shaped potato,
- change, the process by using a more effective vegetable peeler instead of the current knife,
- add a potato peel product to the product line,
- change, the product by leaving the peel on the potato.

Give the new products appealing names, do some "green" marketing about the business's waste reduction, and customers will eat it up.

Preventing pollution at a real business is nor always complex. Fixing a leaky valve. Switching to reusable rather than disposable items. Using the oldest supplies first. Not buying more than is needed. Using the least toxic materials possible. In other words, making choices based on the pollution created.

Choosing to prevent pollution. It can protect the environment and it can help your business. And as to drying my hands, I've selected a third option. Wiping them on my jeans seems to work pretty well.

For more information on pollution prevention, contact Becky Shannon, Technical Assistance Program, at 1-800-361-4827.

The "Call'em" column

- Communities planning projects are encouraged to order a copy of ***Environmental Planning for Small Communities.*** This is a free publication distributed by the United States Environmental Protection Agency, EPA/625 /R-94/O09. To request a copy, call (513) 569-7562.
- The Technical Assistance Program (TAP) recently established an electronic database for the Toxics Release Inventory, TRI. This database provides hazardous chemical emission and release data for manufacturing facilities throughout Missouri. If you would like TRI information concerning your community or have further questions about the TRI, please contact Gene Nickel at TAP at 1-800-361-4827.
- The deadline for the state revolving fund loan and 40 percent grant programs is November 15. Late applications will not be accepted. If you need an application, or assistance in applying, call Carl Brown in the Local Government Assistance Unit of TAP, at 1-800-361-4827.
- Those doing painting or coating in the St. Louis area can learn about pollution prevention options at a workshop October 4, 1995. For more information, contact the St. Louis Regional Commerce and Growth Association at (314) 444-1191 or call TAP at 1-800-361-4827.
- You may not know that all major water users must report their water use to the Missouri Department of Natural Resources' Division of Geology and Land Survey each year under a 1983 Missouri law (RSMO Chapter 256.400). The law's purpose is to protect the state's future water supplies and ensure they continue to meet demands. A major water user is a person, firm or corporation with equipment capable of withdrawing or diverting 100,000 gallons or more per day from surface or groundwater sources. Water use is reported yearly. The reporting forms are mailed to each registered major water user. If you need registration forms, please contact Jeanette Barnett at (314) 368-2188 or write Missouri Department of Natural Resources, Division of Geology and Land Survey, Economics and Water Use Unit, P.O. Box 2S0, Rolls, MO 65402.
- Flood demolition issues that may concern the department will be coordinated by Carl Brown, Local Government Technical Assistance unit, at TAP, 1-800-361-4827.

How Printers can Prevent Pollution

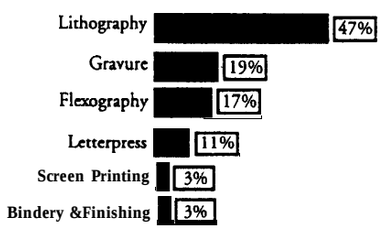
Based on recent studies, the printing and publishing industry, with 1,702 facilities statewide **is the single largest manufacturing** sector in Missouri.

Sixty-three percent are small businesses with fewer than IO employees. About 310 facilities employ between 10 to 20 workers. Another 320 employ over 20; this category accounts for over 80 percent of the workers employed in the printing industry.

The printing industry as a **whole employs approximately** 10 **percent of Missouri's total manufacturing work force.**

The printing and publishing in**dustry uses several types of printing processes or techniques.** Ranked **in decreasing order of market share, these are:**

Printing Processes or Techniques



**Lithography gravure and flexography together account for over 80 percent of the printing market.

Although these printing processes use different techniques to generate and produce an image, there are similarities in their waste streams. These may include waste paper, empty ink and chemical containers, spent developing or fixing chemicals, wastewater, used transfer media such as films or rubber blankets, or used cleaning solvents and waste ink. Typically, the components causing the greatest environmental impact are the volatile organic compounds (VOCs) contained in the inks and solvents.

Based on the 1993 **Toxics Release Inventory, supplied by the U.S. Environmental Protection Agency, the releases of air pollutants by printers in Missouri totaled approximately 760,000 pounds for the year. These air emissions were all** VOCs. Glycol **ethers, toluene, dichloromethane, methanol and methyl ethyl ketone made up over** 90 percent of the total air emissions.

Pollution prevention is trying to reduce toxic chemicals and the production of wastes at their source.

One of the first and most important steps in implementing a pollution prevention program is to establish it as a company priority. To achieve this, a recognized leader in a company should announce the program to the employees, asking for their support and input, and voice personal commitment to such a program. A pollution prevention **or** waste minimization team can **then** be formed to **start** evaluating **various waste streams and pollution prevention opportunities. Important sources of information include** records of waste disposal costs, environmental compliance documents, raw material purchases and possibly an informal inventory of dumpster contents. Press operators **and other personnel can often provide valuable insight to processes or procedures that generate high volumes of wastes or emissions.**

Basic pollution prevention approaches include material substitution, equipment modifications, equipment automation or computerization, waste segregation, inventory control and good **material** handling practices. Use of alternate materials for inks and solvents is a high preference approach.

Printers in the St. Louis area can learn more about pollution prevention at a seminar Septem**ber** 28, "Improving Your Bottom Line Through Pollution Prevention and Energy Conservation. " For more information, contact Gene Nickel or Becky Shannon at 1-800-361-4827.

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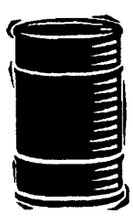
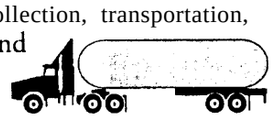
State Hazardous Waste Contract

A newly rebid state-wide contract entitled "Hazardous **Waste** Disposal" has replaced the expired "Hazardous Substance Disposal Services Contract." This contract is available to State of Missouri agencies and to political **subdivisions participating in the Local Government Cooperative Procurement Program. It will help them meet the challenge of properly disposing of their waste.**



Four vendors on the contract provide service in different geographic areas of the state. Services include identification, packaging, collection, transportation, storage and recycling or disposal of many types of waste. Services can range from routine pickup of packaged wastes to conducting a household hazardous waste collection project. The contract runs May 1,1995, through April 30, 1996. Contact Laura Ortmeyer at (314) 7S 1 -4S79 if you have questions about the contract.



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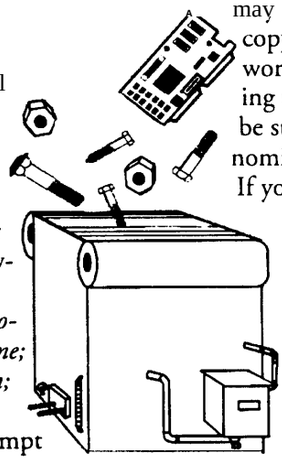
New Vapor Degreaser Regulations Take Effect This Summer

The U.S. Environmental Protection Agency (EPA) has new rules for operators of halogenated solvent cleaning machines, commonly known as vapor degreasers, using the following solvents: *methylene chloride; perchloroethylene; 1,1,1-trichoroethane; tricholorethylene; chloroform; carbon tetrachloride.*

Blended solvents are exempt from the regulation as long as they contain below 5 percent by weight of the regulated solvent(s). Operators of these machines must notify Ward Burns at the EPA Region VII office in Kansas City, Kansas **by August 29,** 1995, that they operate one or more of these machines; call (913) **551-7960.** The regulations are different for batch type and in-line cleaners. Emission reductions are to be achieved through improved operating practices, operator training and control technologies. All operators must maintain records, and periodic reports are required to demonstrate compliance with the regulations.

The EPA and the University of Tennessee recently presented a teleconference on compliance with the new regulations for operators of halogenated solvent cleaners. DNR's Technical Assistance Program (TAP) hosted the presentation in Missouri. The conference was taped, and copies are available for checkout at the Department of Natural Resources Regional Offices in St. Louis, Independence and Springfield. You may also check out a copy through TAP. A workbook accompanying the conference can be supplied for a nominal printing cost. If you operate a halogenated solvent cleaner and need assistance with the new regulation, contact Omer Roberts, TAP, at 1-800-361-4827.



Title V Operating Permit Program Update

The 1990 Clean Air Act Amendments require the state to initiate an operating permit program for air pollution sources with potential emissions above a threshold limit. So-called Part 70 (major) sources are those with potential emissions of 10 tons per year of any hazardous air pollutant, 25 tons per year of any combination of hazardous air pollutants or 100 tons per year of any air pollutant including fugitive emissions of any regulated air pollutant. Certain qualifications do apply. All solid waste incinerators and asphaltic concrete plants, regardless of emissions potential, must get an operating permit. Basic sources, with potential emissions greater than the threshold but less than the major source level, are required to submit the application to DNR's Air Pollution Control Program by December 31, 1995. Small businesses may get an extension to allow more time to complete the application.

An intermediate source is one with potential emissions that would make it a major source but which agrees to voluntary conditions in its permit to limit its emissions to less than the major source quantity. Intermediate source permit applications must be filed within 60 days of federal (EPA) approval of the state plan; approval is now expected in March 1996, making the application deadline May 1, 1996. The deadline for intermediate permit applications may also be extended; intermediate sources should check with DNR's Technical Assistance Program (TAP) well in advance of the deadline.

Major sources were divided into three year classes to spread the permit review work load. Those in the first year are required to apply no later than 60 days after federal approval of the state plan; those in the second and third year are required to file no later than one year after approval. TAP is planning workshops on how to complete the operating permit application; the workshops will be presented by TAP and DNR's Air Pollution Control Program. For further information, contact Omer Roberts, TAP, at 1-800-361-4827.

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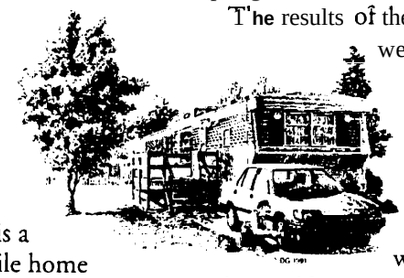
TAP Helps Troubled Liberty Village



Liberty Village is a 200-unit mobile home park located in the northeast corner of the Kansas City metropolitan area. The park has its own sewer system and a small sewage plant to treat its wasrewater. Park management operates the system, and they have had great difficulties in meeting their permit effluent limits. Biochemical oxygen demand and settleable solids have been too high. Complaints about strong odors have been common. The treatment plant has even released sewage sludge into the receiving stream. The park staff tried to solve these problems, with no success, until they contacted Jerry Riesenbeck of the Missouri Department of Natural Resources in fall 1994.

When Jerry arrived on the scene, he found two aeration blowers running 24 hours a day. There was black septic sewage discharging into the stream, odors were obnoxious, and the return pumps were not working.

Jerry devised a plan to solve their problems, which involved installing diffusers in the plant, converting the sludge holding rank into an aerobic digester and installing new return pump piping. The cost of the materials for these modifications was about $500. The job was completed in spring 1995.

The results of the modifications were even better than the park staff had hoped. After the new diffusers and return piping were installed, only one blower was needed to supply ample air for aeration. The other blower serves as a backup for when the in-service blower needs to be shut down for maintenance and repairs. Each five-horsepower blower uses about $2oO worth of electricity per month, By using one blower at a time, the electric bill savings alone paid for the materials costs in about three months. Park management also achieved their original goals: bringing the plant back into compliance with their permit limits, eliminating the obnoxious odors and protecting the stream into which they discharge.

Meet the staff . . . .

Jerry Riesenbeck is no stranger to wastewater treatment. Jerry has been providing troubleshooting assistance through the department to cities, sewer districts, private companies and the like for eight years. Before that Jerry ran treatment plants for the city of Washington, Missouri, and at Kwajalein, Marshall Islands. Jerry is also an experienced power rodding technician and holds a wastewater "A" operator licence. If you think you might have a wastewater treatment problem, call Jerry Riesenbeck at 1-800-361-4827.

What does the local government assistance unit do?

Jerry Riesenbeck and his wastewater treatment troubleshooting services are an important part of the local government assistance unit, but they're just the start. If a community is facing an environmental problem or opportunity, we can get involved. We can help communities tackle technical and planning problems and locate sources of financing. We work on projects such as water and wastewater troubleshooting, planning and financing, solid waste collection and landfills, yard waste comporting and materials recycling, to name just a few. For more information, call Carl Brown, Technical Assistance Program, at 1-800-361-4827.

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Technical Assistance Program

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TAP into DNR is provided free to those who request it. The newsletter informs readers about Environmental Quality issues and helps business owners, local governments and the general public control or prevent pollution. Please check a box:

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